

REMARKS

Claims 1-3 and 6-11 remain pending in this application for which applicant seeks reconsideration.

Amendment

Fig. 10 has been labeled as --Prior Art--.

Claims 1-11 have been amended to improve their form and clarity to overcome all objections raised by the examiner. In this respect, dependent claims 2-9 all begin with --The-- instead of "An." Moreover, the preamble of claim 11 has been amended to embody the computer program in a computer-readable medium to overcome the § 101 rejection. Independent claims 1, 10, and 11 further have been amended to define that the second control device/step is adapted to render the moving amount of the focus lens corresponding to the operation amount of the operating member detected by the detection device when the present state of the focus lens is in the first depth of focus greater than when the present state of said focus lens is in the second depth of focus, the first depth of focus being deeper than the second depth of focus.

No new matter has been introduced.

Art Rejection

Claims 1, 4-6, 8, and 10-11 were rejected under 35 U.S.C. §102(b) as anticipated by Sato (USP 5,832,318). Claim 2 was rejected under 35 U.S.C. §103(a) as unpatentable over Sato in view of Norita (USP 6,906,751). Claim 3 was rejected under § 103(a) as unpatentable over Sato. Claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Sato in view of Okawara (USPGP 2002/0041334). Lastly, claim 9 was rejected under § 103(a) as unpatentable over Sato in view of applicant's admitted prior art.

Applicant traverses each of the art rejections because Sato, as well as all other applied references, would not have disclosed or taught the responsiveness control (now second control) set forth in the original claims.

Independent claim 1 now calls for a second control device adapted to control the moving amount of the focus lens corresponding to the operation amount of the operating member. As presently claimed, the second control device is adapted to render the moving amount of the focus lens corresponding to the operation amount of the operating member when the present state of the focus lens is in the first depth of focus greater than when the present state of the

focus lens is in the second depth of focus, the first depth of focus being deeper than the second depth of focus. Independent claims 10 and 11 substantially parallel independent claim 1.

Sato discloses a manual focusing ring 3 for controlling a focusing motor 15, which is controlled based on the amount of rotation (pulse count) and direction of the manual focusing ring, the object distance and the optical focal length of a zoom lens. Specifically, the sensitivity of the focusing operation changes based on the object distance and the zoom factor, namely as set forth in Fig. 9. Sato merely discloses that the “depth of field” relates to the object distance, but nowhere does Sato disclose changing the sensitivity of the focus operation based on the depth of field:

Generally, a change in the object distance causes the focal length or the depth of field to vary. Therefore, the feeling of operation on operation means varies with the object distance. In the case of the lens of this embodiment, the driving amount is increased in the neighborhood of a minimum object distance, because the rate of change in focal length becomes more moderate accordingly as the lens position comes closer to the minimum object distance with the driving amount not changed. This relation is illustrated by FIG. 4 on the basis of the driving control in the constant angle-of-view varying rate mode shown in FIG. 3. With the driving control performed in this manner, the amount of change in focal length relative to the operation amount (rotation angle) of operation means is effectively controlled not to vary according to the object distance, etc. [Column 6, lines 23-37].

Here, note that Sato is discussing controlling the focal length, i.e., zooming sensitivity, and not controlling focusing operation. Sato rather discusses the focusing control in column 10, but also fails to correlate the focusing sensitivity based on the depth of focus:

Generally, the value of focusing sensitivity (S_{MF}) becomes lower accordingly as the object distance comes nearer to a minimum object distance. **The sensitivity to the focusing operation thus varies with the object distance to give a disagreeable operation feeling.** In view of this, the embodiment is arranged to apply a correction in such a way as to make the curved face shown by full lines into the flat face shown by broken lines as shown in FIG. 8. The term “focusing sensitivity (S_{MF})” as used herein means the amount of movement of an image plane which varies in relation to the amount of movement (operation amount) of the MF ring 3 along the circumference of the operation part. [Column 10, lines 28-44; emphasis added].

Again, Sato is completely silent regarding varying the focusing sensitivity based on the depth of field (or depth of focus as presently claimed). Accordingly, applicant submits that independent claims 1, 10, and 11 clearly distinguish over Sato.

Regarding claim 2, applicant submits that Norita would not have alleviated Sato's shortcomings noted above even if the combination were deemed proper for argument's sake. That is, Norita would not have disclosed or taught varying the amount lens displacement based on the depth of focus. While Norita discloses focusing an image based on particular pixels of a particular accumulated charge, it does not in any way refer to using the pixel density of an image to vary the lens displacement amount based on the depth of focus as claimed.

Regarding claim 7, applicant submits that Okawara also would not have alleviated Sato's shortcomings noted above even if the combination were deemed proper for argument's sake. Moreover, in contrast to the examiner's assertion, Okawara would not have disclosed or taught the claimed magnetic type sensor." Indeed, Okawara's Figs. 12 and 13 illustrate a photo detector.

Regarding claim 9, applicant submits that applicant's admitted prior art also would not have alleviated Sato's shortcomings noted above even if applicant's admitted prior art were deemed applicable for argument's sake.

Conclusion

Applicant submits that claims 1-3 and 6-11 patentably distinguish over the applied references and are in condition for allowance. Should the examiner have any issues concerning this reply or any other outstanding issues remaining in this application, applicant urges the examiner to contact the undersigned to expedite prosecution.

Respectfully submitted,

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